

## Abstract

**Semiconductor-on-insulator substrate comprising a buried diamond-like layer and method for making same**

The substrate successively comprises a base (1), a diamond-like carbon layer (3), a dielectric layer (4) and a semi-conducting material layer (5) which is designed to constitute microelectronic elements. A nucleation layer (2) is preferably disposed between the base (1) and the diamond-like carbon layer (3). The dielectric material (4) is chosen such that the upper level ( $E_{di}$ ) of the valence band of the dielectric material (4) is lower than the upper level ( $E_{cd}$ ) of the valence band of the diamond-like carbon (3). The semi-conducting material (5) is chosen such that the upper level ( $E_{sc}$ ) of the valence band of the semi-conducting material (5) is higher than the upper level ( $E_{cd}$ ) of the valence band of the diamond-like carbon (3). The substrate can be achieved by successive depositions or by assembly of first and second stacks.

(Figure 1)